



FIG.1

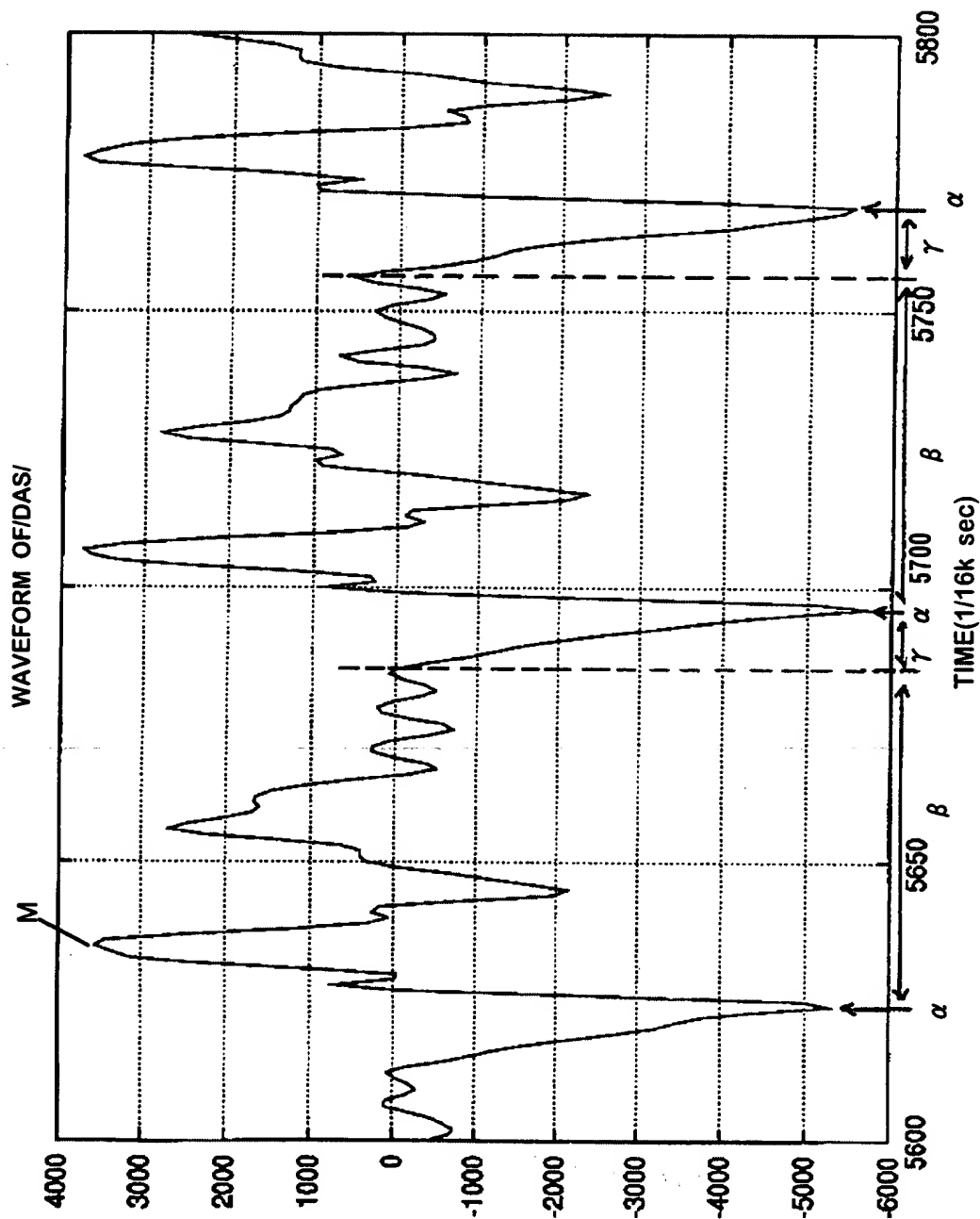


FIG.2

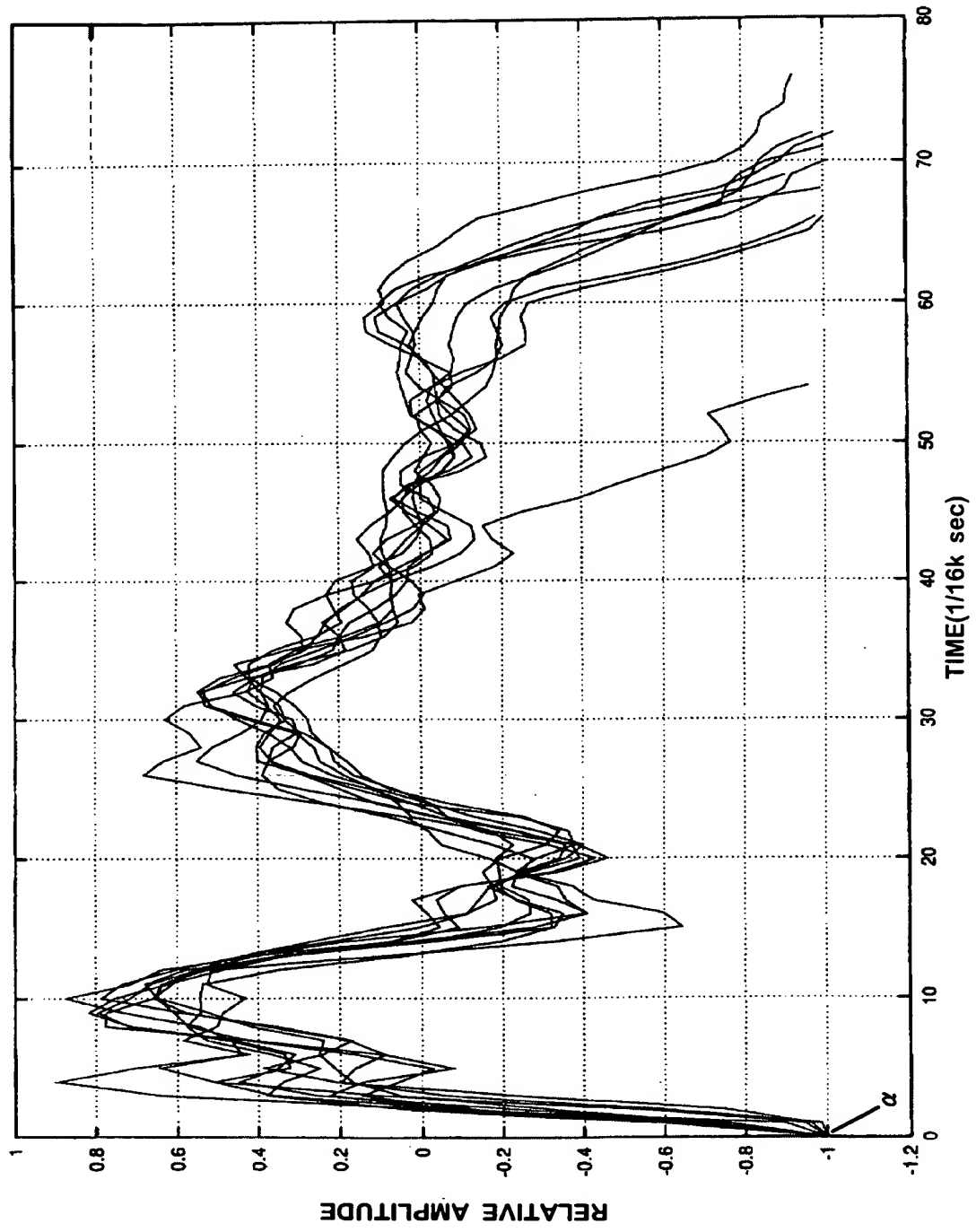


FIG.3

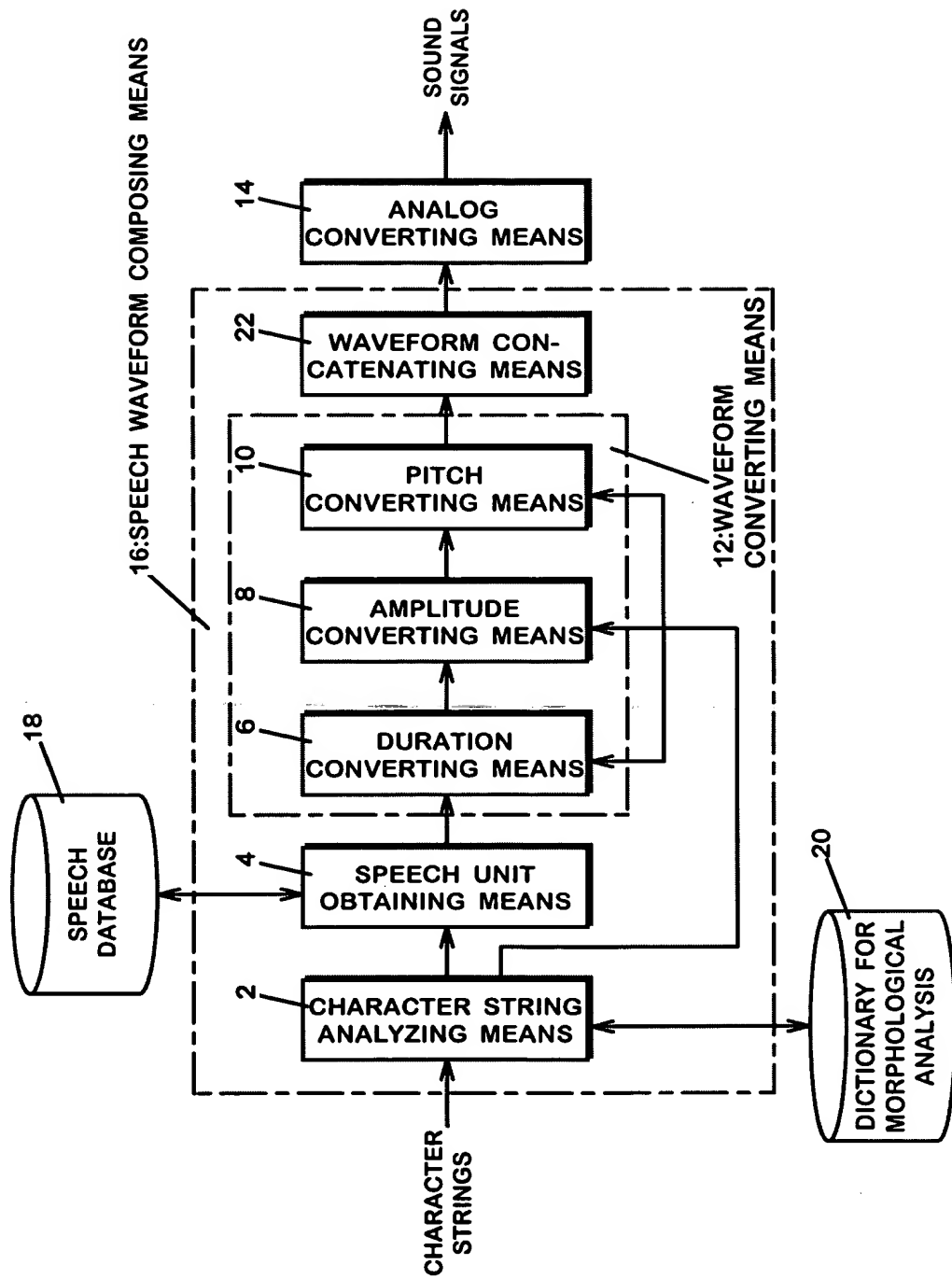


FIG.4

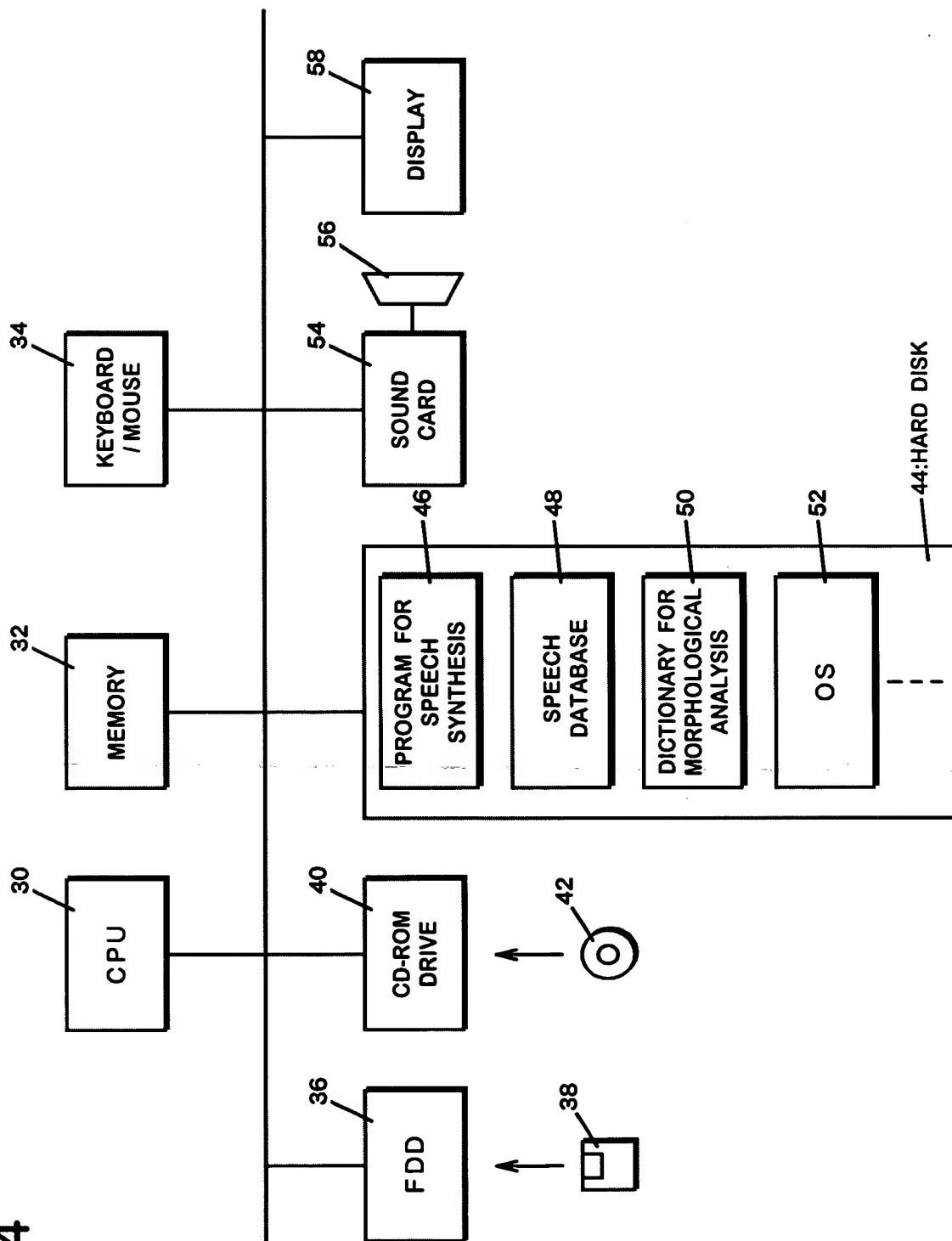


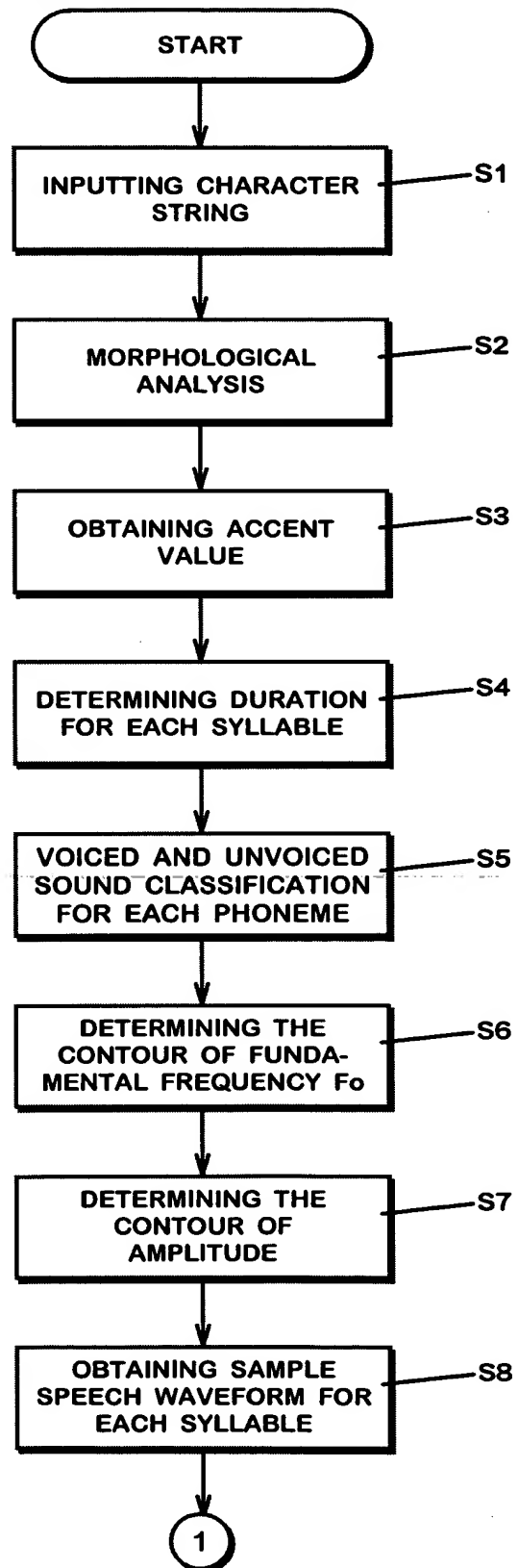
FIG.5**SPEECH SYNTHESIS PROGRAM**

FIG.6

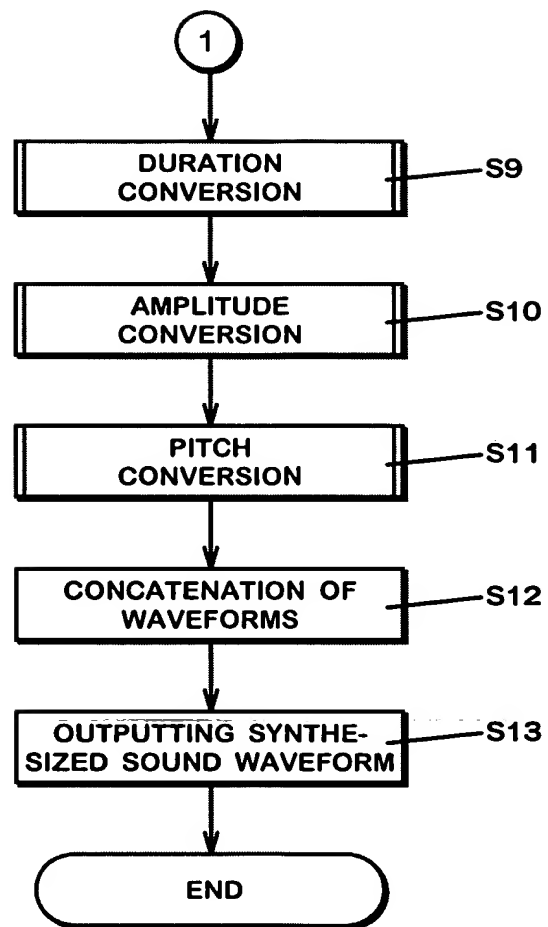


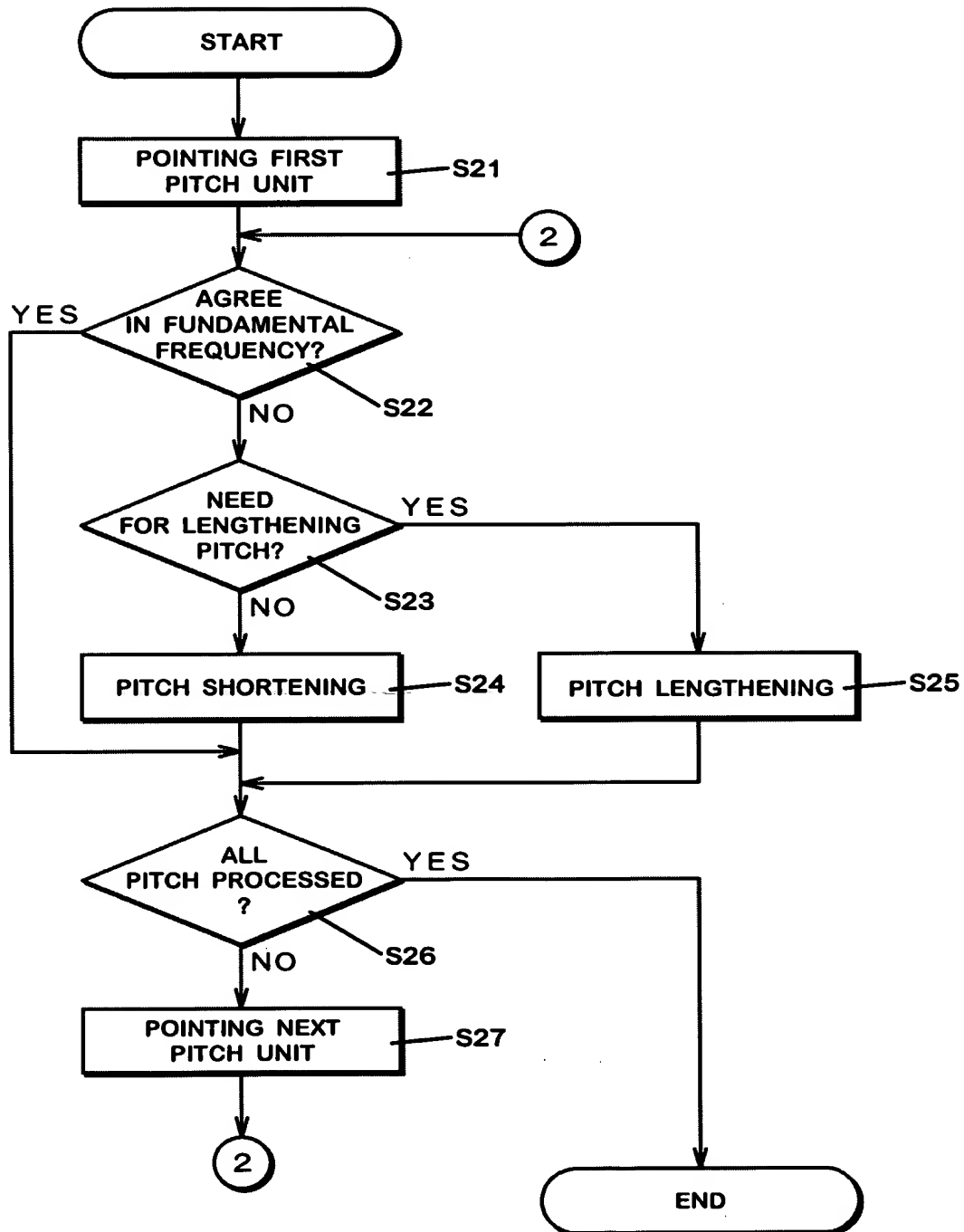
FIG.7**PROGRAM FOR PITCH CONVERSION PROCESS**

FIG.8

WORD DICTIONARY

WORD	PART OF SPEECH	READING	----	SYLLABLE	ACCENT VALUE
桜	NOUN	s a k u r a	----	s a	1
				k u	5
				r a	0
さく	VERB	s a k u	----	s a	5
				k u	0
が	POST POSITIONAL PARTICAL OF JAPANESE	g a	----	g a	2

FIG.9

DICTIONARY OF SYLLABLE DURATION

SYLLABLE	DURATION [ms]
a	110
i	114
u	90
!	!
ko	188
!	!

FIG.10

SYLLABLE	CHAIN OF SYLLABLE SEQUENCE	[ms] TIME	[ms] SYLLABLE DURATION	ACCENT VALUE
ko	koN	0	188	0
N	Nni	188	92	5
ni	nich	280	212	5
chi	chiw	492	178	0
wa	wa	670	166	7

FIG.11

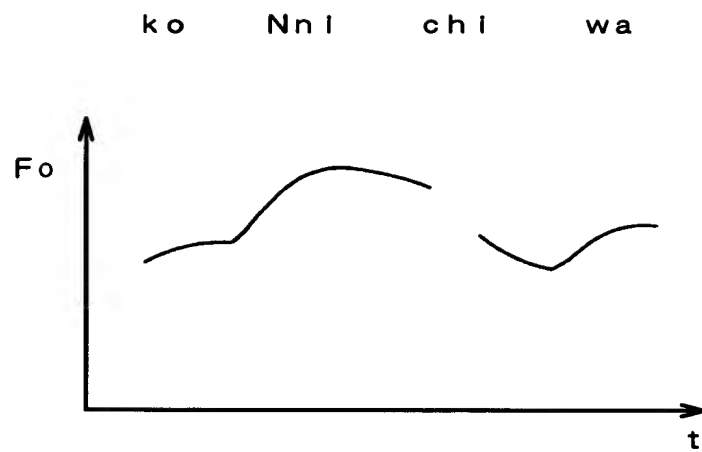


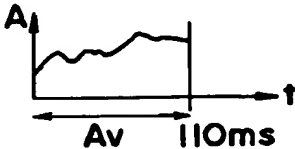
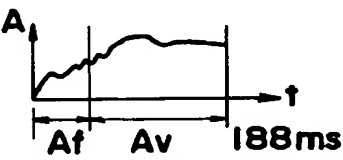
FIG.12

DICTIONARY OF VOICED / UNVOICED SOUNDS FOR CONSONANTS / VOWELS

PHONEME	INDEX
a	V
i	V
l	l
k	CU
l	l
b	CV
l	l

FIG.13

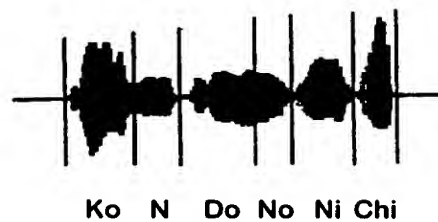
DICTIONARY OF SOUND SOURCE AMPLITUDE

SYLLABLE	SOUND SOURCE AMPLITUDE
a	
⋮	⋮
ko	
⋮	⋮

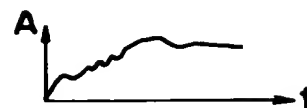
A_v : VOICED SOUND SOURCE AMPLITUDE
A_f : UNVOICED SOUND SOURCE AMPLITUDE

FIG.14

BEST AVAILABLE COPY



**CONTOUR OF
SOUND SOURCE AMPLITUDE OF / ko /**



**CONTOUR OF
FUNDAMENTAL FREQUENCY OF / ko /**



DURATION OF / ko /

1 2 3ms

PITCH MARK

0, 15, 30, ...

ZERO CROSSING MARK

12, 27, 42, ...

FIG.15

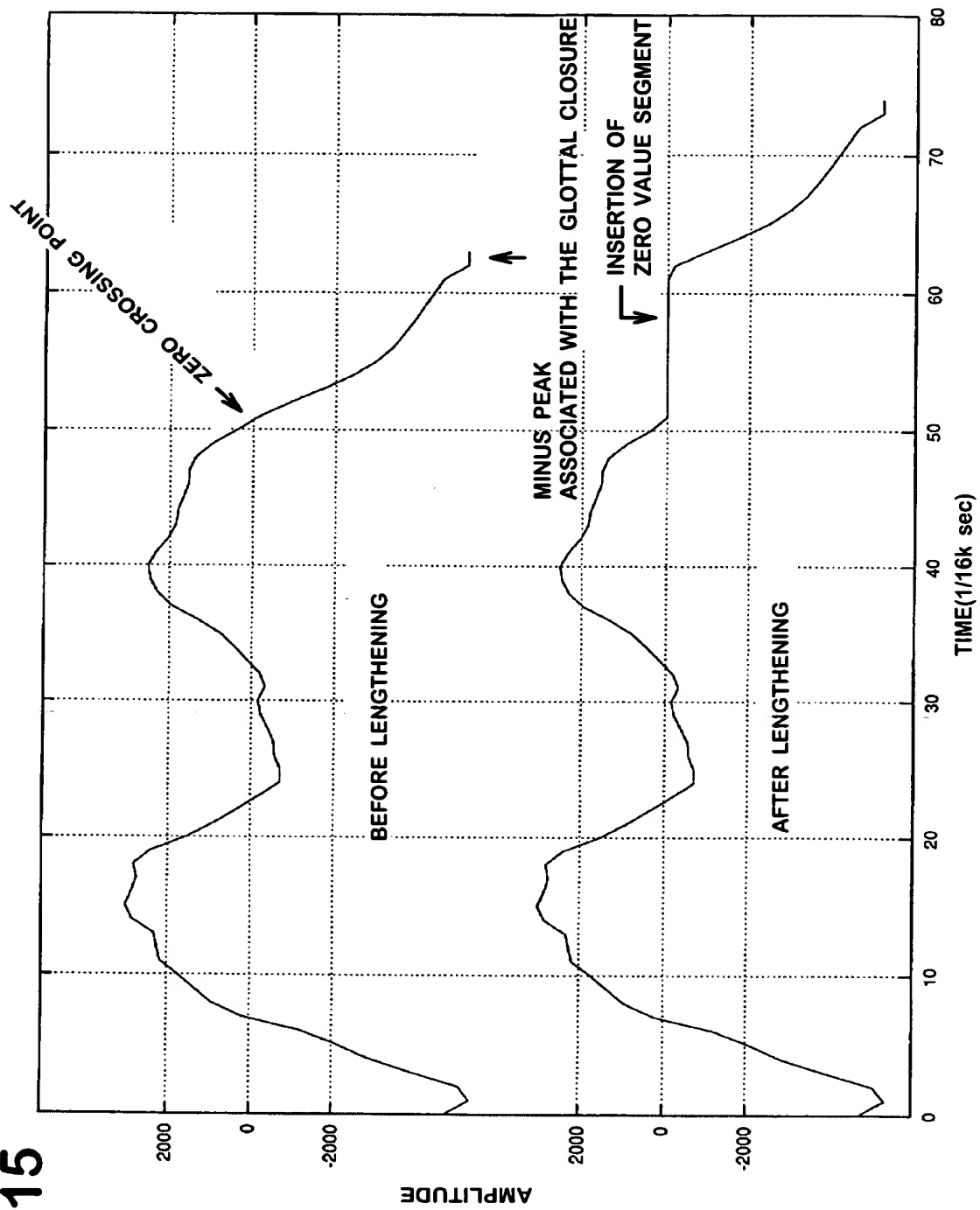


FIG.16

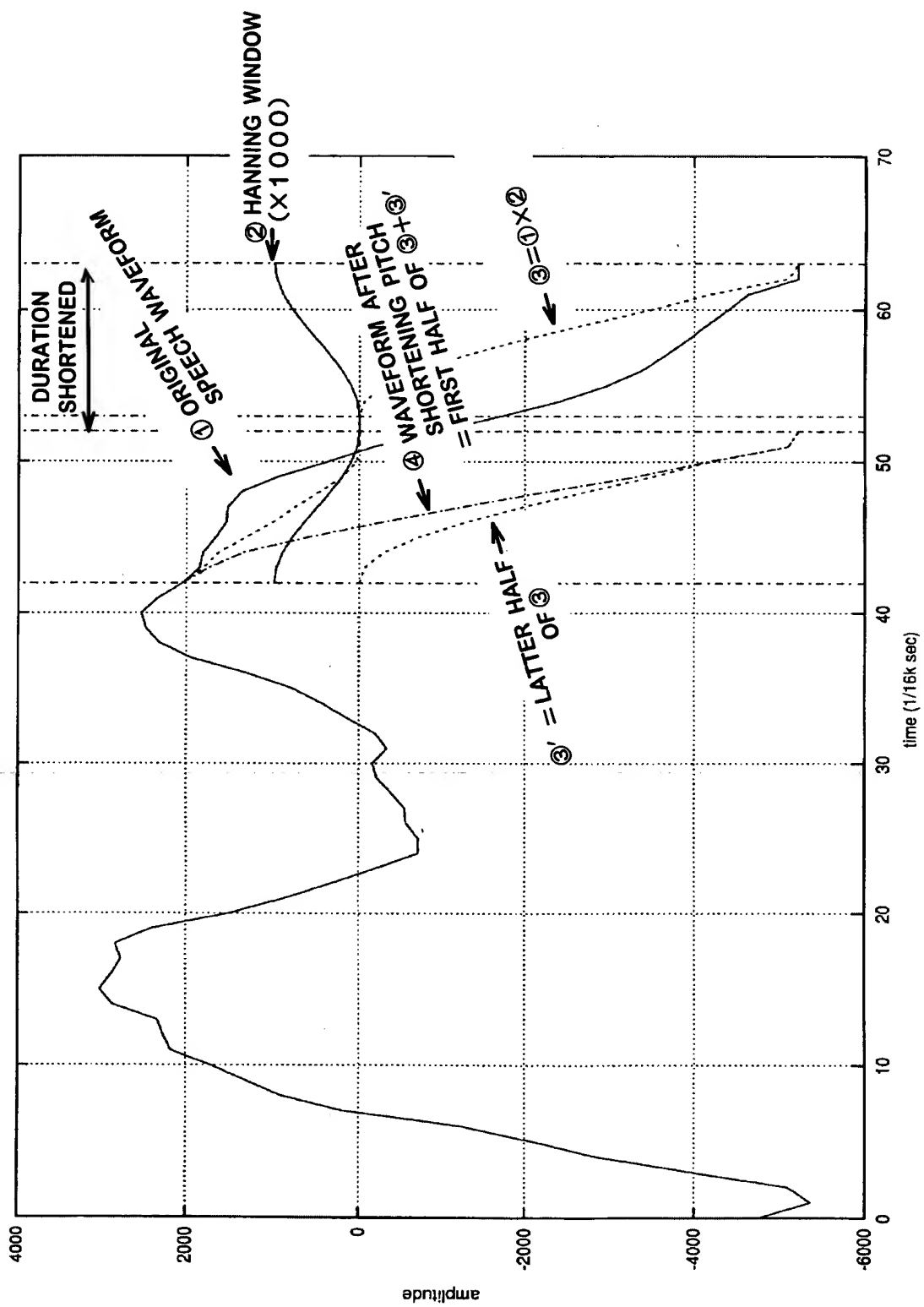


FIG.17

SYLLABLE WEIGHT	TYPE OF SYLLABLE WEIGHT	SYLLABLE STRUCTURE	EXAMPLE
1	LIGHT SYLLABLE	(C) (y) V	ka, sa, ta, na, ha, ma, ya, ra,... a, i, u, e, o, che, pya,....
2	HEAVY SYLLABLE	(C) (y) V R (C) (y) V J (C) (y) V N (C) (y) V Q	to: , ya:, kyu:, pyu:,... kai, nou, ai, ui, pyua,... kaN, aN, myaN, chaN,... chuQ, ryaQ, jaQ, hyaQ,...
3 OR MORE	SUPER HEAVY SYLLABLE	(C) (y) V R N (C) (y) V R Q (C) (y) V J N (C) (y) V J Q (C) (y) V N Q AND THE LIKE	che:N, ju:N, a:N, ... u:Q, che:Q,... saiN, pauN, auN, chaiN,... kaiQ, daiQ, kyaiQ, uiQ,... doNQ, uNQ, chaNQ,...

C : CONSONANT (EXCLUDING Q, Y AND N)

y : SEMI VOWEL

V : VOWEL (EXCLUDING R AND J)

R : LONG VOWEL

J : THE SECOND ELEMENT OF DIPHTHONG

Q : GEMINATED SOUND (JAPANESE SOKUON)

N : SYLLABIC NASAL

(X) : SYLLABLE WEIGHT IS INDEPENDENT OF X

FIG.18

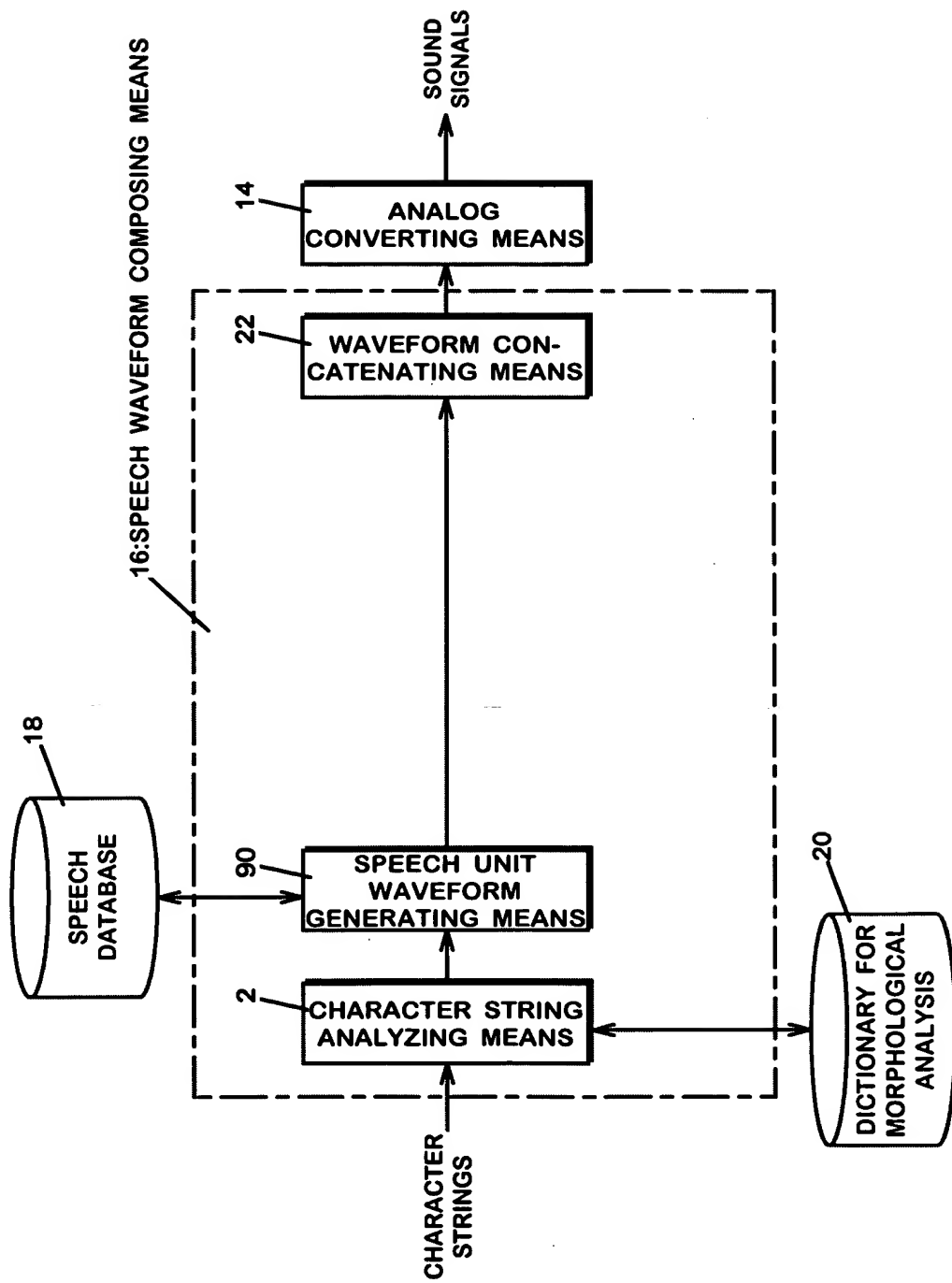


FIG.19

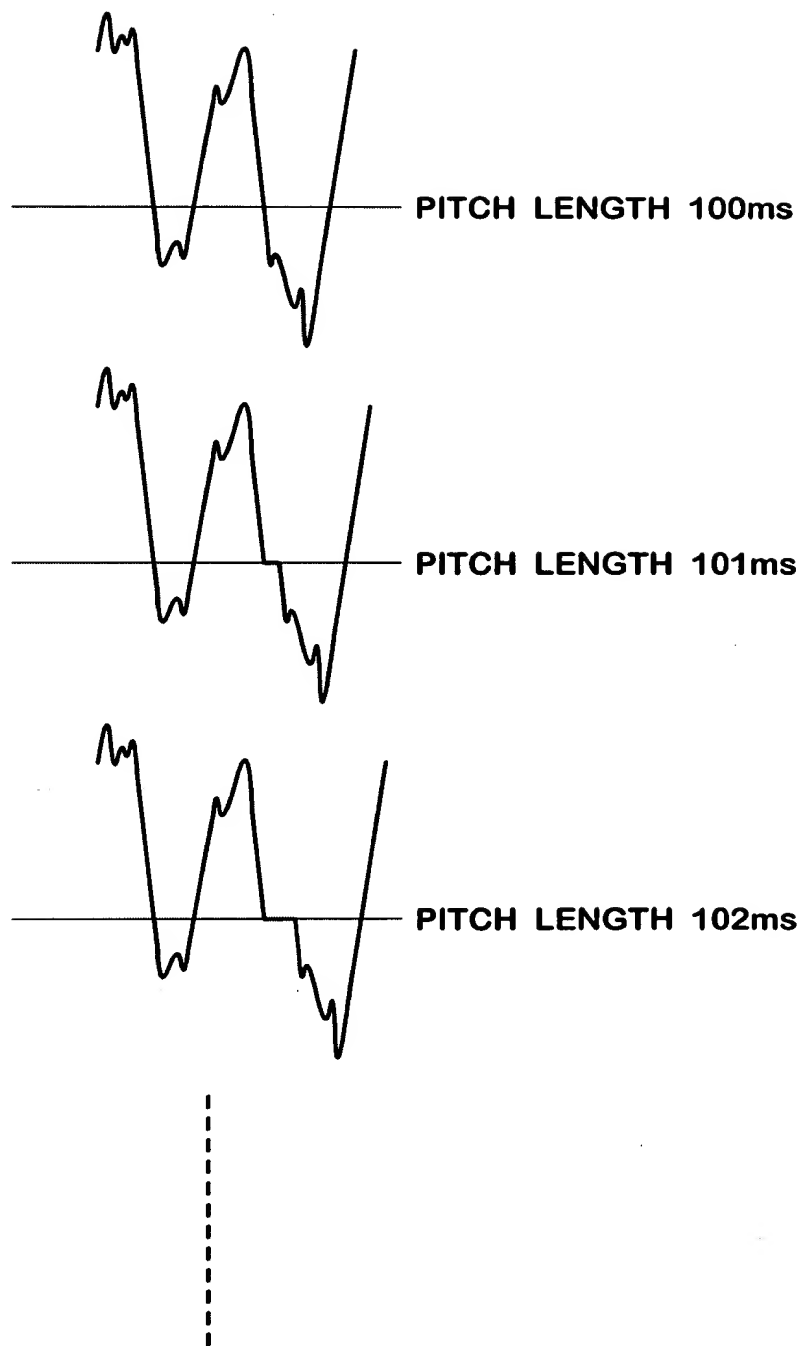


FIG.20

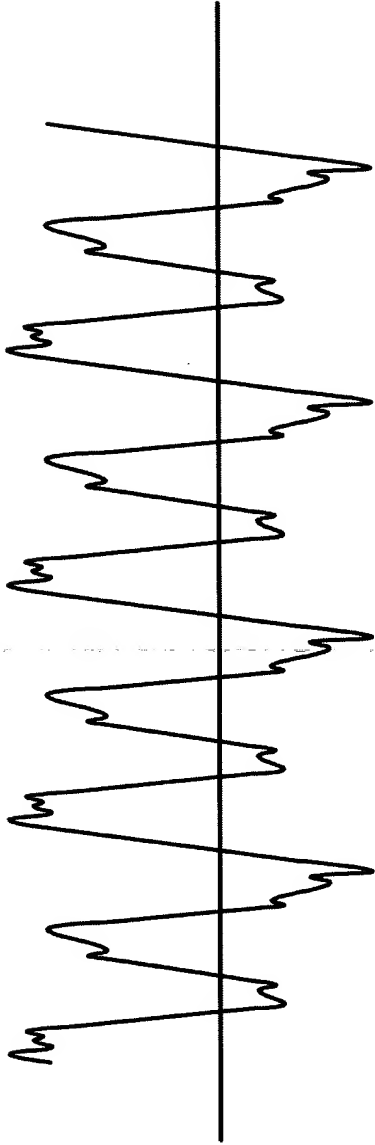
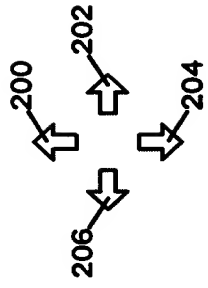


FIG.21

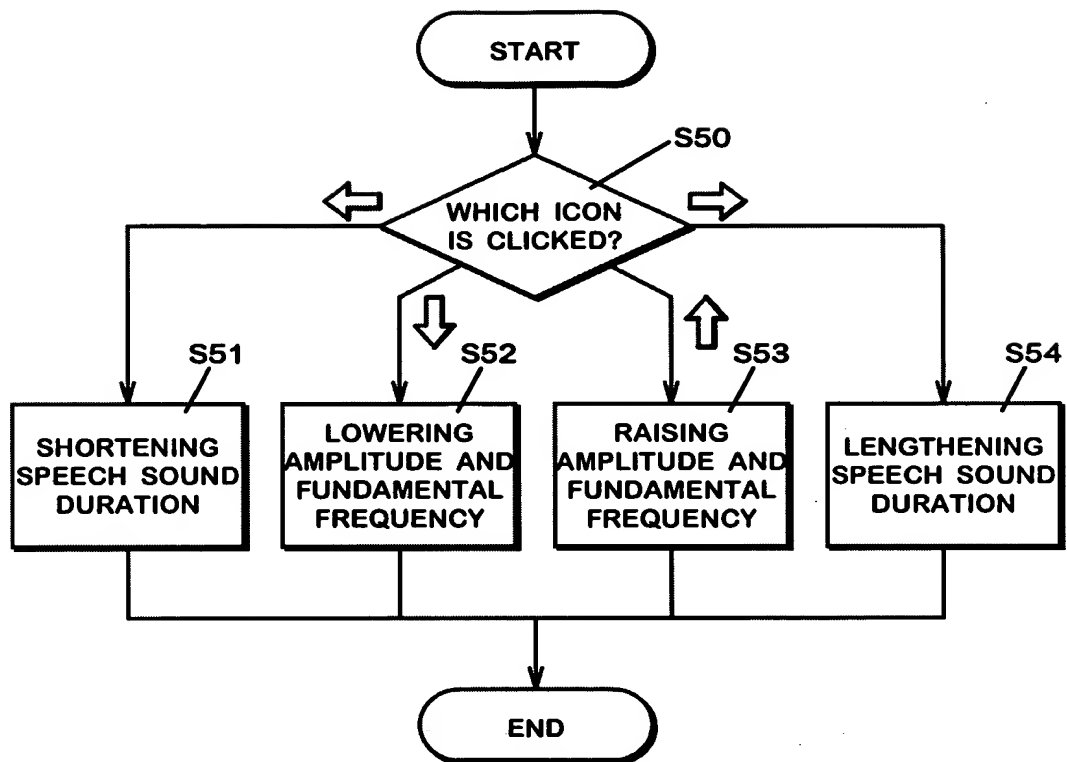


FIG.22

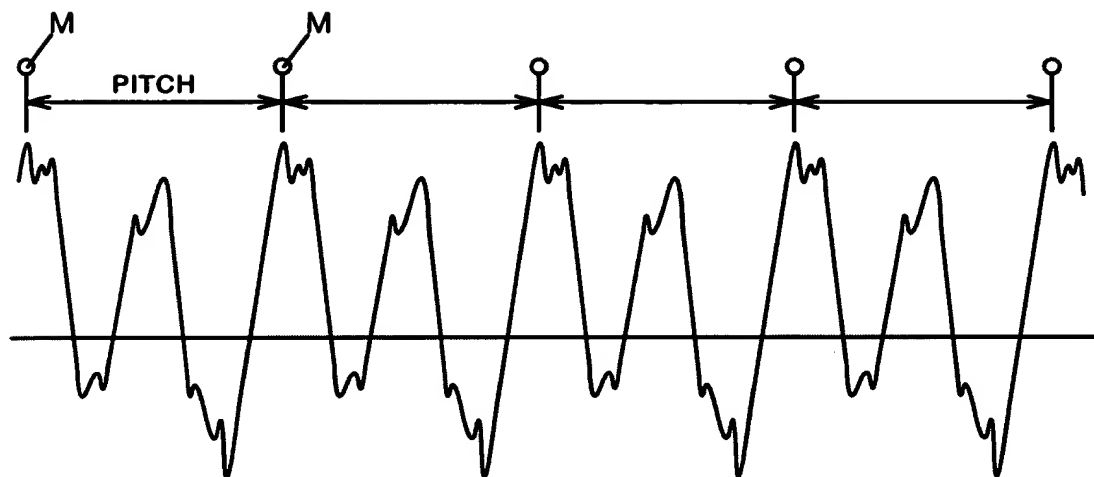


FIG.23

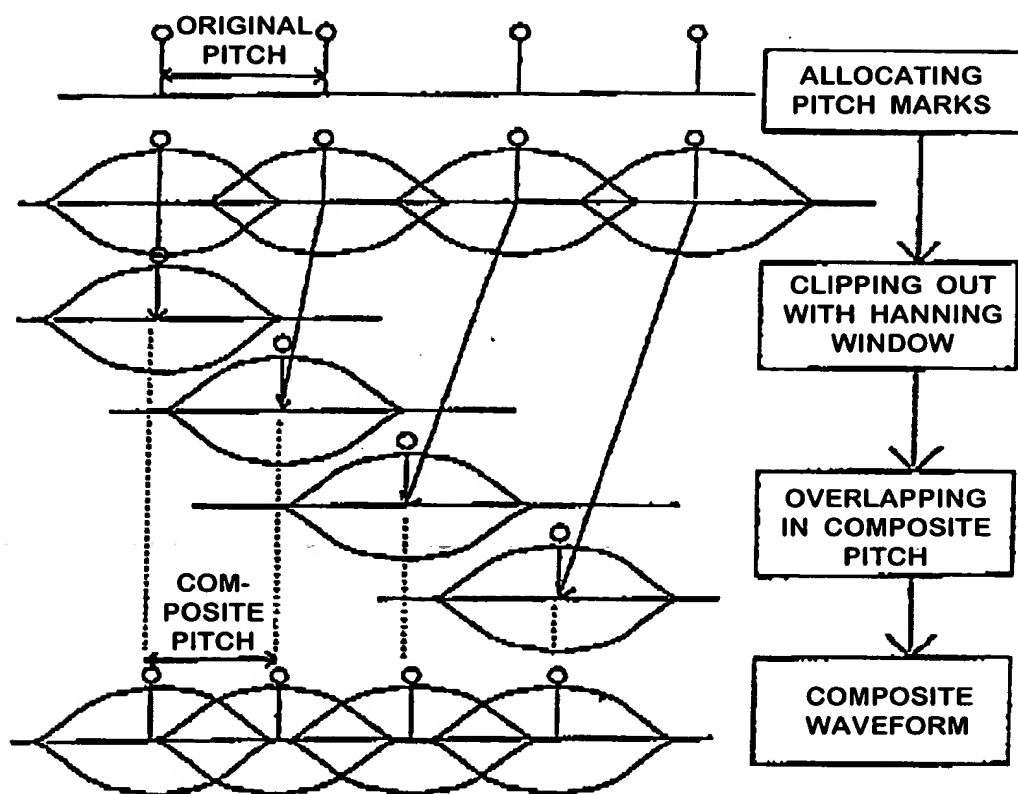


FIG.24

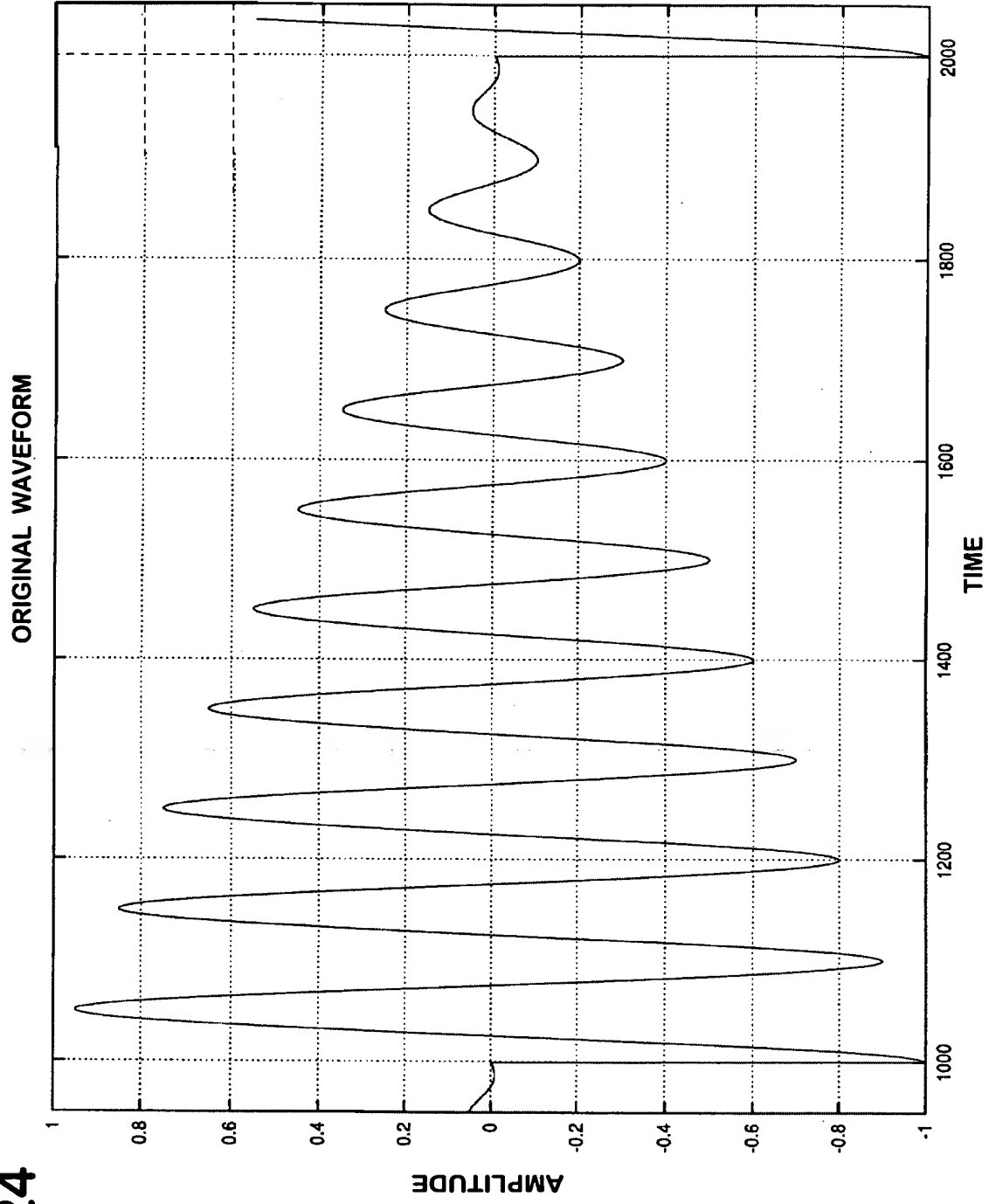


FIG.25

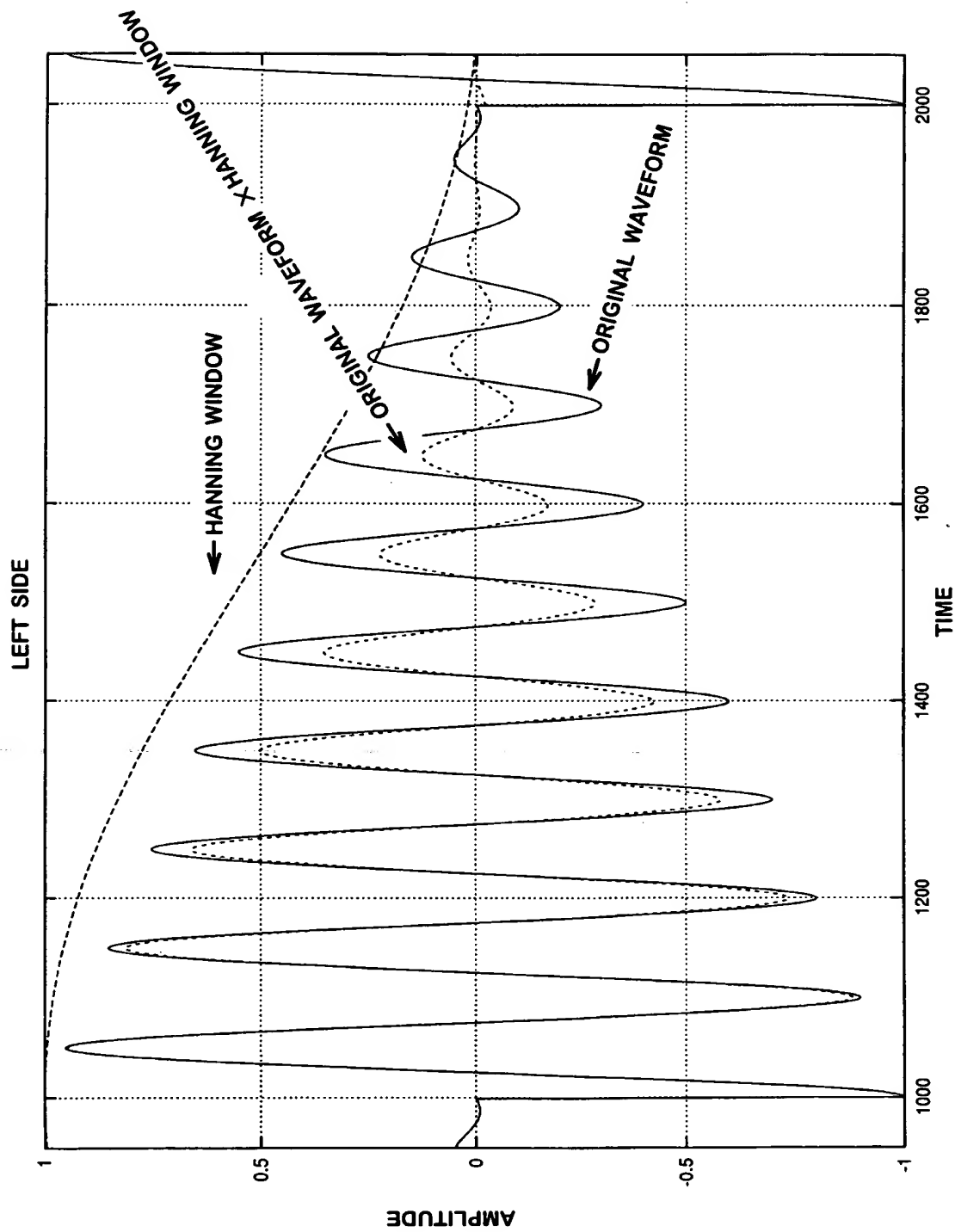


FIG.26

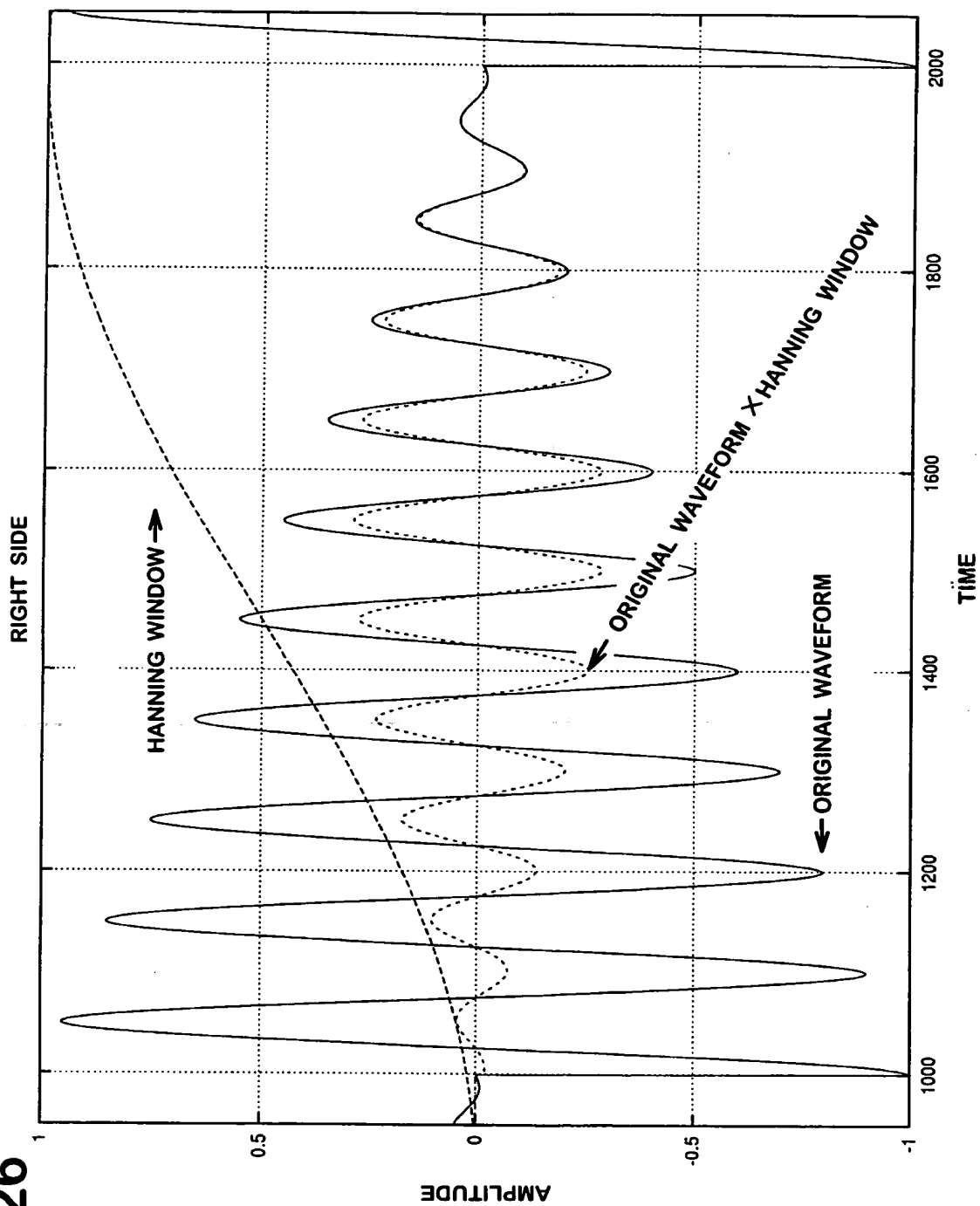


FIG.27

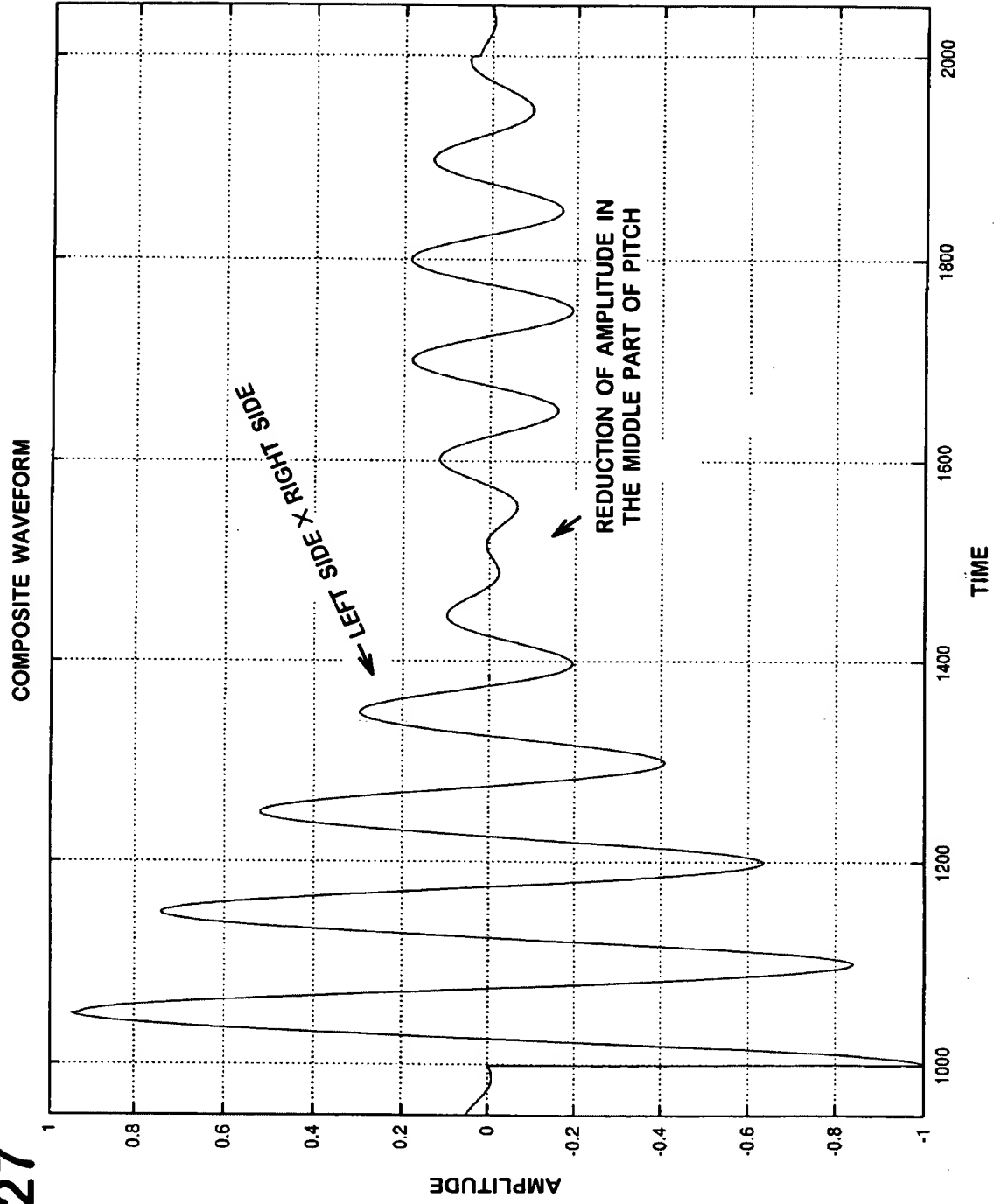
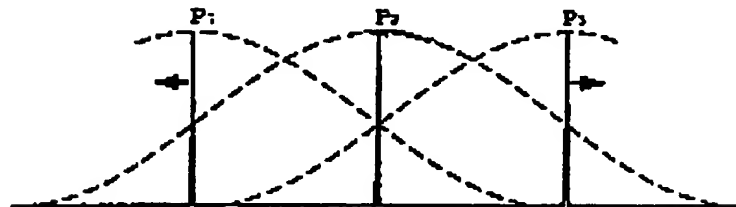


FIG.28

ORIGINAL SIGNALS (SOLID LINE) AND WINDOW FUNCTION (BROKEN LINE)



SIGNALS AFTER CONVERSION OF F_0

